The Department of Mathematics
2020–21–B term

Course Name  Introduction to Complex Analysis
Course Number  201.1.0071
Course web page  https://www.math.bgu.ac.il//en/teaching/spring2021/courses/introduction-to-complex-analysis
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Office Hours  https://www.math.bgu.ac.il/en/teaching/hours

Abstract

Requirements and grading

Course topics

1. Complex numbers, open sets in the plane.
2. Continuity of functions of a complex variable
3. Derivative at a point and Cauchy–Riemann equations
4. Analytic functions; example of power series and elementary functions
5. Cauchy’s theorem and applications.
6. Cauchy’s formula and power series expansions
7. Morera’s theorem
8. Existence of a logarithm and of a square root
9. Liouville’s theorem and the fundamental theorem of algebra
10. Laurent series and classification of isolated singular points. The residue theorem

Information may change during the first two weeks of the term. Please consult the webpage for updates
11. Harmonic functions
12. Schwarz’ lemma and applications
13. Some ideas on conformal mappings
14. Computations of integrals